

Watershed Rehabilitation

A Progress Report 2005



Indian Creek Dam No. 2, West Pottawattamie County, Iowa.

This 70-foot high dam was built as a grade stabilization structure on a tributary to Indian Creek. It is one of several dams built upstream from the city of Council Bluffs to control erosion and downstream flooding. The 29-acre lake provides fishing, recreation and wildlife habitat.

The structure is currently in good condition, but upstream hydrologic conditions have changed due to landuse changes and urban development, and downstream development has placed more people and facilities in the floodplain.

Downstream From Dam



If the dam were to fail, six houses and one business would be in the breach area. Water would then flow into a concrete channel that flows through Council Bluffs. If this channel overflowed it would affect a fire station, nursing home, a school, and a variety of business and streets.

The project sponsors requested and NRCS approved the dam for rehabilitation because of the concern for safety and health of those living and working downstream. NRCS is working with local watershed project sponsors to develop a watershed plan supplement with several alternatives to be considered to rehabilitate the dam to bring it up to current dam safety standards.

White Tanks Watershed Dam No. 3, Maricopa County, Arizona.

This dam was built under a pilot watershed program in 1954. Problems occurred with the dam and some corrective action were taken. The dam is being rehabilitated because problems continued to develop and there would be possible loss of life and property if the dam failed. An estimated 800 homes and businesses, and 6,000 people would be affected if the dam failed, including 2,400 female inmates and 400 employees at the Perryville State Prison.

Rehabilitation of the dam will consist of raising the height of the dam and constructing a reinforced auxiliary spillway and new concrete encased steel pipe outlets. Foundation issues will be addressed along with modifications to the principal spillway pipe.



Yellow River Watershed Dam No. 14, Gwinnett County, Georgia.

This dam was built in 1968 as a significant hazard dam under the Resources Conservation and Development Program (RC&D). The significant classification was based upon the fact that two state highways were downstream from the dam. Since 1968 the population of the county has increased from 73,000 to 625,000 and urban development has occurred both upstream and downstream from the dam.

There are 45 homes in the dam breach zone and this prompted the Georgia Environmental Protection Division to identify the dam as a high hazard dam. The dam was approved for rehabilitation by NRCS and the project has been completed. A roller compacted concrete spillway was constructed over the top and down the back slope of the dam. Construction cost was \$1.8 million and the public benefits associated with the project are \$3.7 million annually. The life span of the dam was extended for another 100 years.



Glenn Hills Dam No. 2, St. Croix County, Wisconsin.

This dam was built as a low hazard dam to protect rural agricultural land. After the dam was built in 1972, a home and garage were built downstream from the dam. Rehabilitation funds were used to relocate the home out of the floodplain. Current local zoning now limits residential development downstream from the dam.

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Much progress has been made in a very short time in the rehabilitation of aging flood control dams. This comes as a result of the initiative of watershed project sponsors and the excellent partnership between the Natural Resources Conservation Service, state conservation agencies, and state dam safety officials.

NRCS looks forward to continuing to work with communities to identify and rehabilitate dams that could become a threat to public health and safety. Rehabilitation will not only ensure that these flood control dams remain safe and protect the lives of people in the community, but that they will continue to provide flood control, recreation and wildlife habitat for another 50 to 100 years.

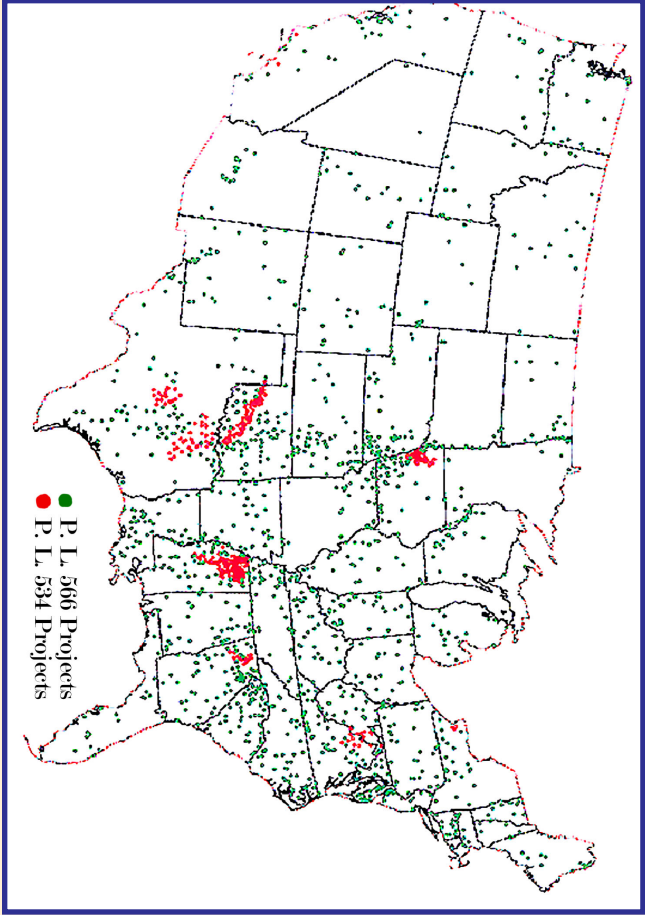
This progress report provides background information on watershed rehabilitation, outlines the progress made to date and makes projections for anticipated requests for assistance in the future.

Watershed Program Has Provided Multiple Benefits to Communities for Over 50 Years

Congress established the Watershed Program by enacting the Flood Control Act of 1944 (Public Law 78-534) and the Watershed Protection and Flood Prevention Act of 1954 (Public Law 83-566). Under these authorizations, the USDA Natural Resources Conservation Service has assisted watershed project sponsors in the construction of 11,000 flood control dams in 2,000 watersheds in 47 states since 1948.

These projects provide an estimated \$1.5 billion in annual benefits in reduced flooding and erosion damages, recreation, water supplies, and wildlife habitat.

Most watershed dams were designed for a 50-year life span and some have already reached or exceeded that time. The chart to the right shows the number of dams built each year and provides an indication of future rehabilitation workload.

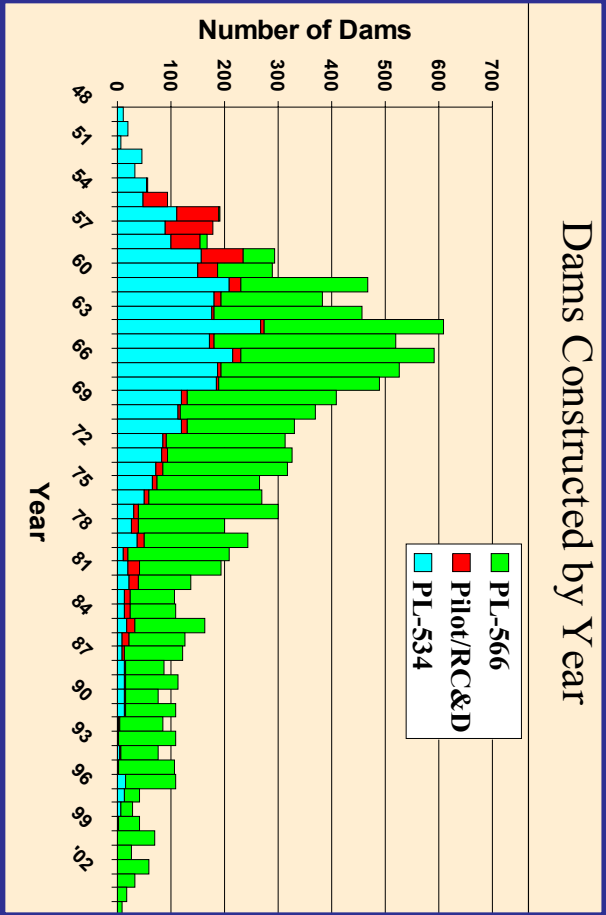


Eleven thousand flood control dams have been built in 2,000 watershed projects in 47 states and Puerto Rico since 1948.

Time Has Taken Its Toll on Dams

Many dams today are in a far different setting than when they were constructed. Population has grown; residential and commercial development has occurred upstream and downstream from the dams; land uses have changed; sediment pools have filled; and concrete and metal components have deteriorated. Many structures do not meet current state dam safety regulations that have been enacted and revised with more stringent requirements than when the dams were built. Many of these dams are also nearing the end of their planned life span of 50 years. Some dams need rehabilitating to ensure they remain safe and continue to function as designed.

Dams Constructed by Year



Watershed Rehabilitation Amendments of 2000

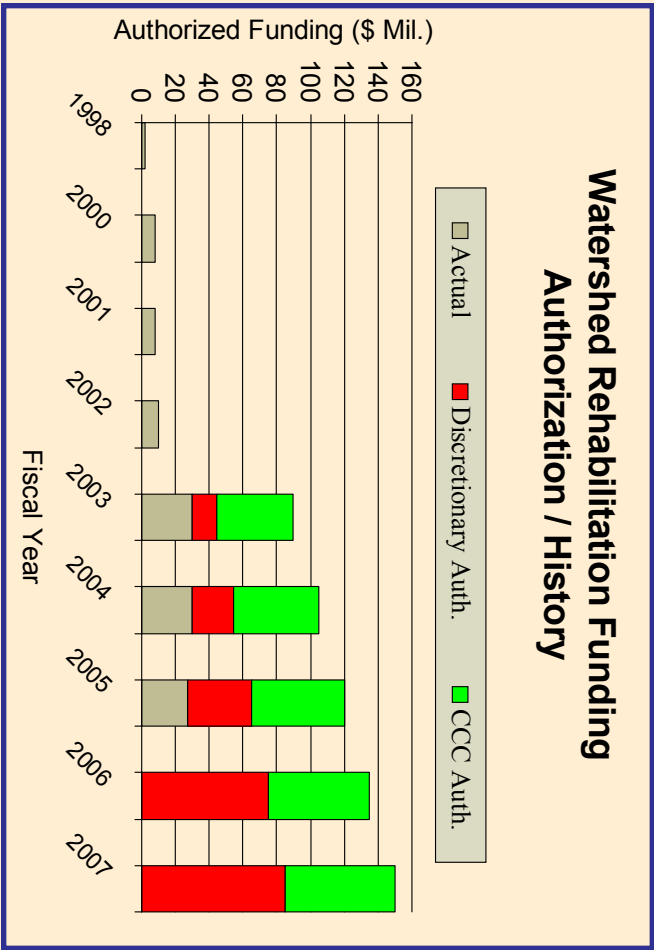
Congress passed the Watershed Rehabilitation Amendments of 2000 which amended the Watershed Protection and Flood Prevention Act (Public Law 83-566) and authorized the Natural Resources Conservation Service to provide technical and financial assistance to watershed project sponsors in rehabilitating their aging dams.

The purpose of rehabilitation is to extend the service life of the dams and bring them into compliance with applicable safety and performance standards or to decommission the dams so they no longer pose a threat to life and property.

The 2002 Farm Bill amended the Act of 2000 to authorize \$600 million in funding for rehabilitation for years 2003 through 2007. The federal government may provide up to 65 percent of funding for rehabilitation projects and project sponsors provide 35 percent.

Projected Requests for Assistance (Fiscal Years 2004-2009)

- ◆ Assessment of 1,500 dams to determine their condition and the need for rehabilitation.
- ◆ Processing of 900 sponsor applications for federal assistance.
- ◆ Development of 700 rehabilitation plans and associated environmental review documents.
- ◆ Completion of 600 designs for implementation of rehabilitation plans.
- ◆ Completion of 450 rehabilitation projects.



This chart summarizes the actual appropriations to date for watershed rehabilitation and the authorized funding through fiscal year 2007. Prior to 2002, the funds were made available through special appropriations for pilot projects. Fiscal year 2002 was the first year funds were appropriated using the Watershed Rehabilitation Authorizations.

Local Sources of Cost-Share Funds

Local watershed project sponsors provide thirty-five percent of the cost of a rehabilitation project. The source of these funds varies from state to state.

Some of the methods that are being utilized in states include:

- ◆ Bonds,
- ◆ County budgets,
- ◆ State park division,
- ◆ State appropriations,
- ◆ Municipal taxing authority,
- ◆ Watershed taxing authority,
- ◆ In kind technical services.

Watershed Rehabilitation Funding Requests for Fiscal Year 2005

State conservationists requested \$46 million for 123 dam projects in 21 states for fiscal year 2005. The requests included initiating 55 new projects not previously funded and assessments of 174 dams.

Watershed Rehabilitation Projects Funded in Fiscal Year 2005

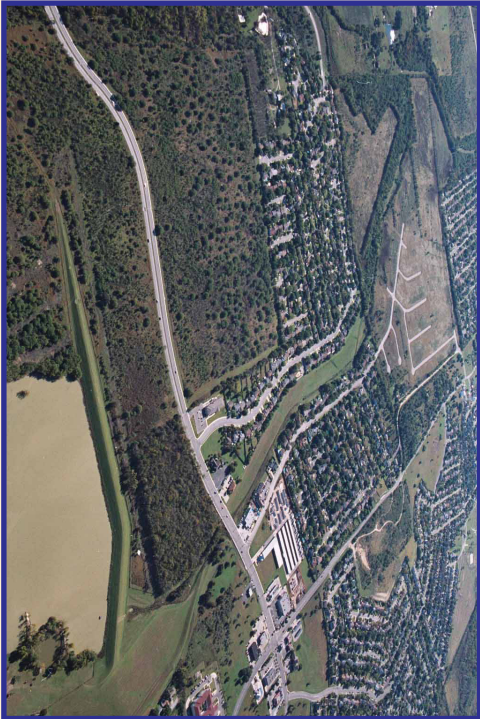
The FY 2005 appropriations bill included \$27,280,000or watershed rehabilitation. This allowed funding for planning and design of 87 projects in 21 states (including 19 new projects in 11 states). Funds were also provided for construction and implementation of rehabilitation plans on 12 dams. Assessments of 174 dams in 37 states will also be completed. Funds are not available to address 36 requests for new watershed rehabilitation projects.

For additional information about the watershed program or rehabilitation of aging dams visit the Natural Resources Conservation Service web site: www.nrcs.usda.gov, click on Programs and then on Watershed Protection and Flood Prevention or Watershed Rehabilitation.

National NRCS contact for watershed rehabilitation: Russell Morgan, NRCS (202)-690-4231
email: Russell.Morgan3@usda.gov

January 2005

Rehabilitation projects are addressing a variety of issues facing watershed project sponsors. These are a few examples of current watershed rehabilitation projects.



Urban development, upstream and downstream from flood control dams poses challenges for watershed project sponsors and may require rehabilitation of dams to ensure safety of people and property.



Martinez Creek Dam No. 5, Bexar County, Texas. The above photos show views looking upstream and downstream from Dam No. 5 and illustrate what is happening in watersheds across the country. This dam was built in 1964 for flood control and protection of rural agricultural land. Now there are 99 residential, 4 public, and 3 commercial properties located downstream within the breach area. A failure of the dam would put all these properties and an estimated 500 people in danger as well as anyone traveling on Kitty Hawk road. The lake formed by the dam is an important resource in the community as an integral part of the City of Live Oak's city park. Over 15,000 people visit the park each year, with an estimated 1,350 utilizing the lake for fishing, picnicking, migratory bird watching and other water-based activities.

The dam is functioning as designed with no current problems. However, the dam was constructed as a low hazard dam and now has been reclassified as high hazard due to urban development downstream and the potential for loss of life if the dam should fail. The dam is being rehabilitated to bring it up to current dam safety standards and extend its life span for another 100 years. The height of the dam will be raised and a roller compacted concrete spillway, new inlet tower and principal spillway pipe will be installed.



Sandstone Creek Dam 17A, Roger Mills County, Oklahoma, was the first rehabilitation project completed under the Watershed Rehabilitation Amendments of 2000. The dam was built in 1952 and the principal spillway had deteriorated and the lake had filled with sediment. The hazard classification of the dam had increased due to downstream development. The rehabilitation project, completed on June 17, 2003, included raising the height of the dam, widening the auxiliary spillway, and replacing the principal spillway tower and pipe.

Bad Axe Watershed Dam No. 24, Vernon County, Wisconsin. Seepage in this dam, known as Skildum Dam, had resulted in partial failure of the embankment. Construction has been completed to rehabilitate the dam to meet current design criteria and safety requirements.